

## A NEW COMBINATION IN BALEARIC *SONCHUS* (ASTERACEAE)

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**SUMMARY:** Phylogenetic analysis of members of the subtribe Sonchinae (Asteraceae: Cichorieae) based on nuclear and chloroplast DNA sequences have revealed that the genus *Aetheorhiza* Cass. is included within *Sonchus* L. lineages. The Balearic endemic *Aetheorhiza montana* Willk. is transferred to *Sonchus* as *S. montanus* (Willk.) Rosselló, comb. nov.

**RESUMEN:** El análisis filogenético de representantes de la tribu Sonchinae (Asteraceae: Cichorieae) basado en secuencias de ADN de los genomas nuclear y cloroplástico ha revelado que el género *Aetheorhiza* Cass. se incluye dentro de *Sonchus* L. El endemismo balear *Aetheorhiza montana* Willk. es incluido en *Sonchus* como *S. montanus* (Willk.) Rosselló, comb. nov..

*Aetheorhiza* Cass. has been suspected for a long time to be closely related to *Crepis* L. In fact, two species (*A. bulbosa* (L.) Cass. and *A. montana* Willk.) have been included in *Crepis* [as *C. bulbosa* (L.) Tausch and *C. willkommii* Burnat & Barbey, respectively). Recent molecular work (KIM & al. 1996, 1999, 2007) has convincingly demonstrated that *Aetheorhiza* is a member of subtribe Sonchinae K. Bremer (Asteraceae: Cichorieae) and does not belong to subtribe Crepidinae Cass. ex Dumort., as previously thought.

The phylogenetic analyses of nuclear and chloroplast DNA sequences support the close relationship of *Aetheorhiza* to *Sonchus* subg. *Sonchus*, in particular to sect. *Sonchus* and *Asperi* Boulos (KIM & al., 2007). Further, all data sets suggest that *Aetheorhiza* originated after the *Sonchus* group diverged from a common an-

cestor with the *Reichardia* and *Launaea* lineage (KIM & al., 2007).

As currently circumscribed, *Sonchus* is highly polyphyletic, since its members occur across clades including taxa of *Actites* Cass., *Aetheorhiza*, *Babcockia* Boulos, *Chrysoprenanthes* (Sch. Bip.) Branwell, *Dendroseris* D. Don, *Kirkiarnella* Allan, *Lactucosonchus* (Sch. Bip.) Svent., *Sventenia* Font Quer and *Taeckholmia* Boulos.

Disentangling the taxonomy of subtribe Sonchinae based on the results obtained by the molecular markers should include the reevaluation of the morphological features displayed by the 10 major clades identified by KIM & al. (2007). However, the sister position of *Aetheorhiza* to *Sonchus* subg. *Sonchus* clade (where the type of *Sonchus*, *S. oleraceus* L. belongs, BRITTON & BROWN, 1913), and the lack of distinct morphological features

separating them other than its habit, do not contradict its inclusion within either, a restricted or expanded *Sonchus* circumscription.

*Aetheorrhiza montana* Willk. is a Balearic endemic plant closely related to *A. bulbosa*. They differ by a combination of leaf (shape, indentation), floral (corolla color, bract hairs), and fruit (cypsela length) features. Also, they grow in contrasting environments and no reports concerning the presence of intermediate specimens between them has been reported.

Sequences from nuclear ribosomal spacers (ITS) have shown that plants from *A. montana* differ by the presence of six to eight mutations at the ITS-2 region (ROSSELLÓ, unpublished data). Available evidence suggests that they are best treated as separate species.

A new nomenclatural combination is here validated:

***Sonchus montanus*** (Willk.) Rosselló, comb. nov.

≡ *Aetheorrhiza montana* Willk. in Österr. Bot. Z. 25: 110 (1875) ≡ *Crepis montana* (Willk.) Marès & Vigin., Cat. Pl. Vasc. Baléares: 176 (1880), nom. illeg. ≡ *C. willkommii* Burnat & Barbey, Notes Voy. Bot.: 56 (1882) ≡ *A. bulbosa* subsp. *montana* (Willk.) Gand., Nov. Consp. Fl. Eur.: 308 (1910) ≡ *C. bulbosa* f. *willkommii* (Burnat & Barbey) Knoche, Fl. Balear. 2: 521 (1922) ≡ *A. bulbosa* subsp. *montana* (Willk.) O. Bolòs & Molinier in Collect. Bot. (Barcelona) 5: tab. 7 (1958), comb. inval. ≡ *A. bulbosa* subsp. *willkommii* (Burnat & Barbey) Rech. fil. in Phytion (Horn) 16: 219 (1974), nom. superfl. ≡ *Sonchus bulbosus* subsp. *willkommii* (Burnat & Barbey) N. Kilian & Greuter in Willdenowia 33: 237 (2003).

**Ind. loc.:** "Mallorca: in glareosis calcareis aridis regionis montanae ad alt. 700-1200 met., d. 17. et 23. Apr. c. flor. et fruct."

**Type material:** Mallorca: in glareosis calcareis rupium que diffusis, sub dumetis in declivitate austr. montis Galatzó ad alt. 2000-3500', 17-IV-1873, *M. Willkomm*, Herb. balear. n. 266 (COI-Willkomm). Lectotype designated by ROSSELLÓ & SÁEZ (2001).

## REFERENCES

- BRITTON, N.L. & A. BROWN (1913) An illustrated flora of the Northern United States, Canada and the British possessions. Ed. 2, 3: 316. Charles Scribner's Sons, New York.
- KIM S.C.; D.J. CRAWFORD. & R.K. JANSEN (1996) Phylogenetic relationships among the genera of the subtribe Sonchinae (Asteraceae): evidence from ITS Sequences. *Syst. Bot.* 21: 417-432.
- KIM S.C.; D.J. CRAWFORD.; R.K. JANSEN & A. SANTOS-GUERRA (1999) The use of a non-coding region of chloroplast DNA in phylogenetic studies of the subtribe Sonchinae (Asteraceae: Lactuceae). *Pl. Syst. Evol.* 215: 85-99.
- KIM S.C.; L. CHUNGHEE & J.A. MEJÍAS (2007) Phylogenetic analysis of chloroplast DNA *matK* gene and ITS of nrDNA sequences reveals polyphyly of the genus *Sonchus* and new relationships among the subtribe Sonchinae (Asteraceae: Cichorieae). *Mol. Phyl. Evol.* 44: 578-597.
- ROSSELLÓ, J.A. & L.I. SÁEZ. (2001) Index balearicum: an annotated check-list of the vascular plants described from the Balearic Islands. *Collect. Bot (Barcelona)* 25: 1-192.

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